STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
UTAH GEOLOGICAL AND MINERAL SURVEY

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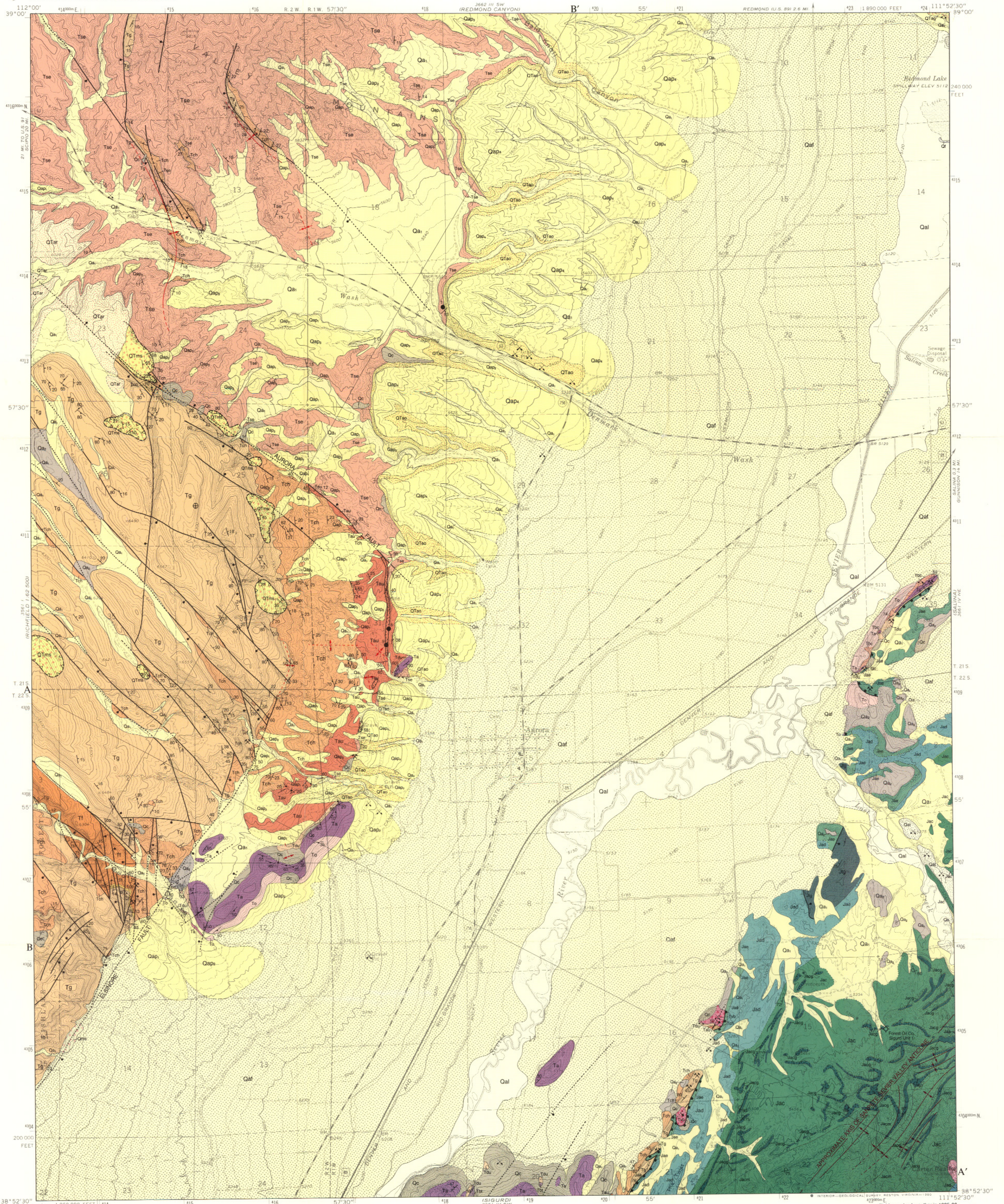
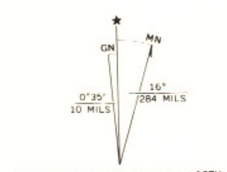
Plate 1
Utah Geological and Mineral Survey Map 112
Geologic Map of the Aurora Quadrangle



Base map from U.S. Geological Survey, Aurora Quadrangle, 1966

Field mapping by author in 1985-86
Kent D. Brown, Cartographer

SCALE 1:24 000
1 MILE
7000 FEET
1 KILOMETER
CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929



UTM GRID AND 1966 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

GEOLOGIC MAP OF THE AURORA QUADRANGLE SEVIER COUNTY, UTAH

by
Grant C. Willis
Utah Geological and Mineral Survey

1988

QUADRANGLE LOCATION

STATE OF UTAH
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Plate 2
Utah Geological and Mineral Survey Map 112
Geologic Map of the Aurora Quadrangle

DESCRIPTION OF MAP UNITS

Qf — Artificial fill—*Manmade dikes and dams.*

Qal — Flood plain and channel deposits of Sevier River and Lost Creek—*Well to moderately well sorted sand, silt, mud, clay, gravel, and boulders.*

Qa_1 — Younger alluvial deposits—*Sand, silt, mud, gravel, and boulders. Primarily ephemeral stream deposits in active depositional areas.*

Qa_2 — Older alluvial deposits—*Sand, silt, mud, gravel, and boulders dissected or isolated by downcutting drainage systems.*

Qaf — Alluvial fan and alluvial slope deposits—*Moderately to poorly sorted sand, silt, mud, gravel, and boulders.*

Qap_1–Qap_4 — Pediment deposits—*Deposits on pediment surfaces isolated by downcutting drainage systems. Poorly to moderately sorted angular to subrounded boulders, cobbles, pebbles, sand and silt. Four relative ages are differentiated based on elevation above adjacent active drainage systems and adjacent pediments. Qap_1 is youngest; Qap_4 is oldest. Numerous intermediate levels are lumped into Qap_2 and Qap_3. Ages should only be considered valid relative to adjacent pediments.*

Qat — Older alluvial terrace deposits along Lost Creek—*Gravel, sand, silt, clay, and boulders.*

Qc — Colluvium—*Slope cover composed primarily of fallen blocks and talus, with minor fine-grained surficial deposits.*

Qms — Landslide deposits—*Poorly sorted, surficial material transported and deposited by mass movement.*

QTag — Gravel deposits of Redmond Hills—*Moderately well sorted gravel and sand with minor amounts of mud and clay.*

QTar — Older alluvial deposits in the northwest part of the quadrangle—*gravel, sand, silt, mud and clay.*

QTao — Older alluvial valley-fill deposits—*Moderately to well sorted gravel, sand, silt, and boulders primarily derived from Tertiary rocks to the west.*

QTms — Slump blocks—*Large coherent blocks of Green River Formation that have detached along bedding planes and moved downslope.*

QTu — Undifferentiated middle and upper Tertiary deposits—*Shown only on cross section.*

Tvb — Volcanic breccia—*Moderately to intensely brecciated and deformed volcanic blocks and volcaniclastic sediment. Probably late Tertiary, age uncertain.*
UNCONFORMITY

Tse — Sevier River Formation—*Mudstone, sandstone, conglomerate, and carbonaceous mudstone. Pale brownish- or reddish-gray. Contains volcanic clasts in the southern part. Forms lightly vegetated hills and intricately dissected slopes. Queried where identity of outcrop is less certain.*
UNCONFORMITY

To — Osiris Tuff—*Light gray, but also reddish-brown, reddish-purple, or brownish-gray, densely welded, porphyritic, latitic tuff with conspicuous plagioclase and biotite, and minor sanidine and Fe-Ti oxides.*

Tbc — Formation of Black Cap Mountain—*Bluish-gray volcaniclastic sandstone with minor conglomerate, air fall tuff, and breccia.*

Ta — Tuff of Albinus Canyon and Antimony Tuff Member of Mount Dutton Formation, undifferentiated—*Dark reddish-brown, dark brownish-gray, or dark gray, densely welded, crystal-poor ash flow tuff of quartz latite composition with plagioclase, sanidine, pyroxene, and drawn-out vesicles and pumice lenticules.*

Tcp — Intrusion of Carter Peak—*Greenish-gray to black and gray, fine-grained, holocrystalline diorite with plagioclase, clinopyroxene, pyroxene, biotite, hornblende, and accessory sphene and apatite.*

Tbt — Three Creeks Tuff Member of Bullion Canyon Volcanics—*Pale gray to pinkish-gray latitic tuff with plagioclase, amphibole, biotite and minor accessory minerals.*
UNCONFORMITY

Tdu — Dipping Vat Formation and unnamed sandstone, mudstone, and conglomerate beds, undifferentiated—*White to pale gray water-lain tuffaceous sandstone, mudstone, marlstone, and conglomerate. Conglomerate contains volcanic and sedimentary-derived clasts.*
UNCONFORMITY

Tau — Formation of Aurora—*Pale gray interbedded mudstone, bentonitic shale, limestone, and sandstone with occasional pale reddish-orange beds. Has reworked pumiceous clay and tuff and pale gray volcaniclastic sandstone in the upper part.*

Tch — Crazy Hollow Formation—*Dark orangish-red and light yellowish-gray "salt and pepper" sandstone, mudstone, siltstone, shale, and black chert-pebble-bearing conglomerate.*

Tg — Green River Formation—*Pale yellow, massive, silicified limestone with chert nodules and interbedded greenish-gray or light brown shale in the upper part and greenish-gray thin-bedded to laminated shale, light brown calcareous sandstone, and light yellowish-gray chalky limestone in the lower part.*

Tco — Colton Formation—*Dark reddish-brown mudstone. Poorly exposed, slope forming.*

Tf — Flagstaff Formation—*Reddish-brown, cliff-forming sandstone, conglomerate, limestone, and minor siltstone.*

TKnh — North Horn Formation—*Shown only on cross section.*
UNCONFORMITY

Ki — Indianola Group—*Shown only on cross section.*
UNCONFORMITY

Jtg — Twist Gulch Formation equivalent to Entrada Sandstone of the San Rafael Swell area—*Interbedded reddish-brown siltstone, mudstone, sandstone, and minor conglomerate.*

Ja — Arapien Shale, undifferentiated—*Shown only on cross section.*

Jae — Unit E of Arapien Shale—*Dark reddish-brown, salt-bearing, silty shale.*

Jad — Unit D of Arapien Shale—*Interbedded, bluish-gray and reddish-gray gypsiferous shale, mudstone, and sandstone.*

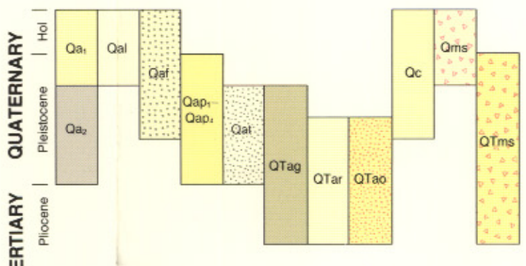
Jac — Unit C of Arapien Shale—*Bluish-gray calcareous shale with gray thin-bedded calcareous sandstone, massive gray to white lenticular gypsum beds, and arenaceous limestone.*

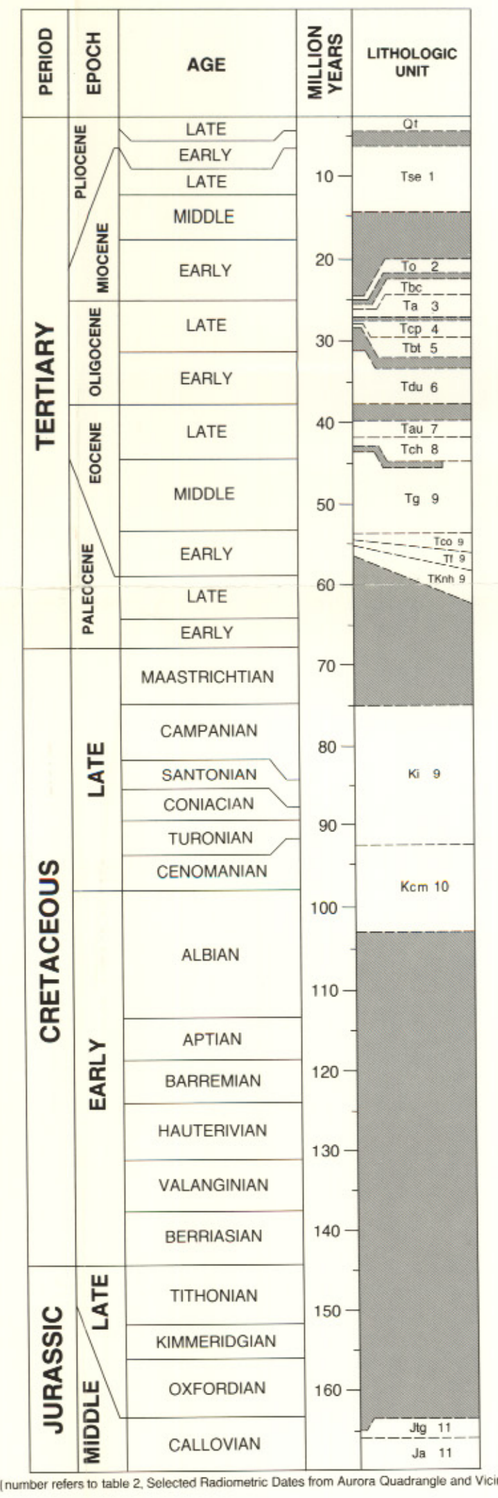
Jacg — Lenticular beds of gypsum within unit C of the Arapien Shale—*Massive, pale gray to white mottled gypsum.*

Jacm — Dark reddish-brown sandstone marker bed in unit C of the Arapien Shale.

Jaa — Unit A of Arapien Shale—*Pale yellow and gray argillaceous, chippy limestone.*

CORRELATION OF MAP UNITS





(number refers to table 2, Selected Radiometric Dates from Aurora Quadrangle and Vicinity)

FORMATION	SYMBOL	THICKNESS Feet (meters)	LITHOLOGY
Surficial Deposits	Q, QT	0-300 (0-90)	
older alluvial valley-fill deposits	QTao	0-800 (0-240)	
Sevier River Formation	Tse	1500-2000 (450-600)	
Osiris Tuff	To	0-200 (0-60)	
Fm. of Black Cap Mountain	Tbc	0-100 (0-30)	
Tuff of Albinus Canyon	Ta	0-300 (0-90)	
Three Creeks Tuff	Tbt	0-200+ (0-60+)	
Dipping Vat Formation	Tdu	50-200 (15-60)	
Formation of Aurora	Tau	700-800 (210-240)	
Crazy Hollow Formation	Tch	900-1000 (270-300)	
Green River Formation	Tg	800-1100 (240-330)	
Colton Formation	Tc	50-300 (15-90)	
Flagstaff Formation	Tf		
North Horn Formation Indianola Group (undif.) Cedar Mountain Formation	Not exposed in outcrop		
Twist Gulch Formation	Jtg	1800-2000 (540-600)	
Arapien Shale — Unit E	Jae	200-400 (60-120)	
Arapien Shale — Unit D	Jad	1000-3000 (300-900)	
Arapien Shale — Unit C	Jac	1000-3000 (300-900)	
Arapien Shale — Unit A	Jaa	20+ (6+)	

CONTACT

Dashed where approximate, dotted where covered

FAULT

High angle, dashed where location inferred; dotted where covered; queried where probable, bar and ball on downthrown side.

May be due to diapirism of mudstone and evaporate beds in the Arapien shale; teeth on diapiric material.

Low angle, bounding detached blocks

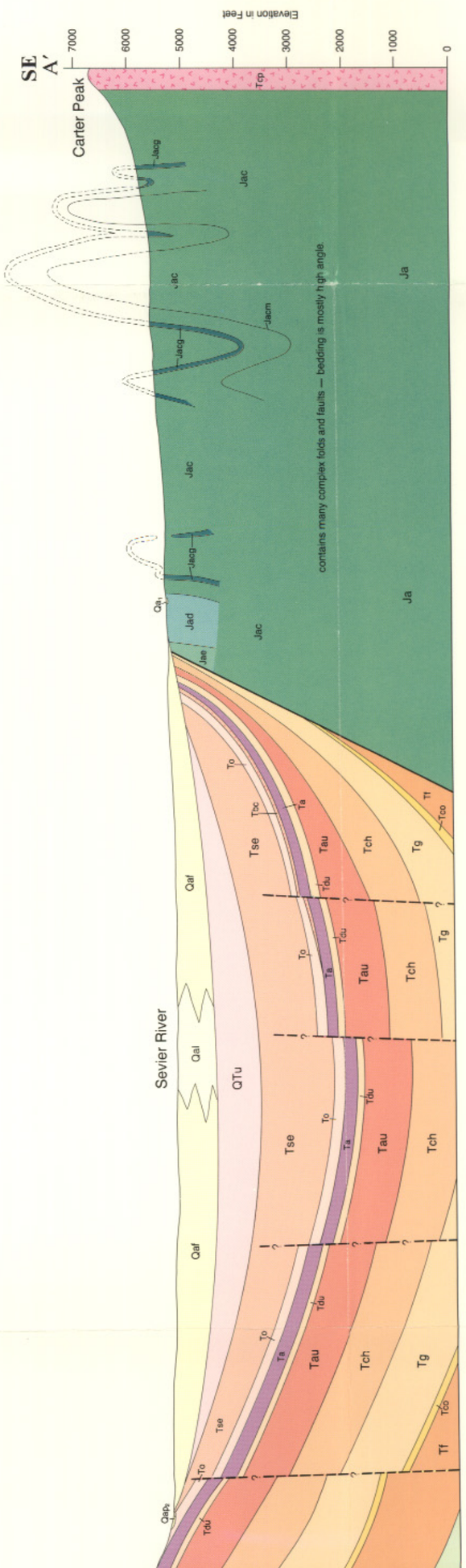
TRACE OF AXIAL SURFACE OF FOLD

Anticline — Syncline — Monocline

Arrows show direction of plunge; dotted where covered

STRIKE AND DIP OF BEDDING

Inclined — Horizontal — Vertical



STRIKE AND DIP OF VOLCANIC FOLIATION

STRIKE AND DIP OF JOINTS

Inclined — Vertical

Prospect, small mine or pit;
s-salt, c-calcite; gy-gypsum; no symbol-unknown

Open pit mine, gypsum or clay

Gravel or road-fill pit

Oil or gas well, dry

Location and sample number of radiometric ages
(see table 2, Selected Radiometric Dates from Aurora Quadrangle and Vicinity)